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Prevention

IMPACT OF INFLAMMATORY BIOMARKERS ON RELATION OF HIGH DENSITY LIPOPROTEIN-CHOLESTEROL WITH INCIDENT CORONARY HEART DISEASE: CARDIOVASCULAR HEALTH STUDY

Moderated Poster Contributions
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Background: Inflammatory factors and low HDL-C relate to increased coronary heart disease (CHD) risk, but whether inflammation attenuates protection from CHD with high HDL-C is unknown.

Methods: In 3,888 older adults aged 65 to 98 without cardiovascular disease, we examined if the inflammatory markers C-reactive protein (CRP), interleukin-6 (IL-6), and lipoprotein-associated phospholipase A2 (Lp-PLA2) modify the protective relation of HDL-C on CHD. HDL-C was grouped as ≥60, 40-59, and <40 mg/dL, CRP as <1, 1-3, and ≥3 mg/L, and IL-6 and Lp-PLA2 as tertiles. Also, an inflammation index of z-score sums of CRP, IL-6, and Lp-PLA2 was categorized in tertiles. We calculated CHD incidence for each HDL/inflammation group and performed Cox regression, adjusted for standard CHD risk factors and triglycerides to examine the relationship of combined HDL-inflammation groups to incident CHD events occurring over a mean 11.1 year follow-up.

Results: The unadjusted CHD incidence (per 1,000 person years) was higher for each category of inflammation and lower for each category of HDL-C (figure). Compared to high-HDL/low-inflammation (referent), adjusted Hazard Ratios (HR) were increased for those in the mid-HDL/high-index group (HR=1.44, p<0.01) which had similar risk to those in the low-HDL/mid-index group (HR=1.43, p<0.05). Similar associations were seen with CRP and IL-6 individually, but not with Lp-PLA2.

Conclusion: The protective relation of HDL-C to incident CHD is attenuated with increasing inflammation.